What is claimed is:

1. A crystallization method of an amorphous semiconductor layer comprising:

providing an amorphous semiconductor layer having a first thickness;

crystallizing the amorphous semiconductor layer in a first direction;

partially reducing the crystallized semiconductor layer to a second thickness less than the first thickness; and

crystallizing the etched semiconductor layer in a second direction.

2. The method according to claim 1, wherein the first thickness is approximately 1000~2000Å.

3. The method according to claim 1, wherein the second thickness is approximately 300~600Å.

4. The method according to claim 1, wherein the lateral crystallization is performed by sequential lateral solidification.

5. The method according to claim 1, wherein the first direction and the second direction are perpendicular to each other.

6. The method according to claim 1, wherein the amorphous semiconductor layer is formed over a substrate.

7. The method according to claim 6, further comprising forming a buffer layer on the substrate.

8. A method of fabricating a thin film transistor comprising:

providing a substrate;

forming an amorphous semiconductor layer over the substrate;

crystallizing the amorphous semiconductor layer in a first direction, reducing the crystallized semiconductor layer, and crystallizing in a second direction to form a polycrystalline semiconductor layer;

forming a gate insulating layer on the polycrystalline semiconductor layer;

forming a gate electrode on the gate insulating layer;

forming an insulating layer on the substrate; and

forming a source electrode and a drain electrode contacting the polycrystalline semiconductor layer.

9. The method according to claim 8, wherein the first direction and the second direction are perpendicular to each other.

10. The method according to claim 8, wherein the crystallization of the amorphous semiconductor is performed by a sequential lateral solidification.

11. A method of fabricating a thin film transistor comprising:

providing a substrate;

forming an amorphous semiconductor layer over the substrate;

crystallizing the amorphous semiconductor layer into a polycrystalline

semiconductor layer having grains with a quasi-rectangular shape;

forming a gate insulating layer on the polycrystalline semiconductor layer;

forming a gate electrode on the gate insulating layer;

forming an insulating layer on the substrate; and

forming a source electrode and a drain electrode contacting the polycrystalline semiconductor layer.

12. The method according to claim 11, wherein crystallizing the amorphous semiconductor layer includes:

laterally crystallizing the amorphous semiconductor layer in a first direction;

reducing the crystallized semiconductor layer; and

laterally crystallizing the etched semiconductor layer in a second direction perpendicular to the first direction.

13. The method according to claim 11, wherein each of the source electrode and the drain electrode contacts the polycrystalline within at least a quasi-rectangular shape of a grain.

14. A method of fabricating a liquid crystal display device comprising:

forming a first thin film transistor in a driving circuit region by using a crystallized semiconductor layer as an active layer by providing a first substrate composed of a pixel region and a driving circuit region, forming an amorphous semiconductor layer on the first substrate, laterally crystallizing the amorphous semiconductor layer in a first direction, etching the crystallized semiconductor

layer, and laterally crystallizing the crystallized semiconductor layer in a second direction perpendicular to the first direction;

forming a second thin film transistor in the pixel region;

forming a pixel electrode electrically connected to the second thin film transistor on the first substrate;

providing a second substrate where a color filter layer is formed;

attaching the first substrate and the second substrate to each other; and

forming a liquid crystal layer between the first substrate and the second substrate.

15. The method according to claim 14, wherein the lateral crystallization of the amorphous semiconductor layer is a sequential lateral solidification.

16. The method according to claim 14, wherein forming the first thin film transistor includes:

forming a gate insulating layer on the crystallized semiconductor layer;

forming a gate electrode on the gate insulating layer;

forming an insulating layer on the gate electrode; and

forming a source electrode and a drain electrode contacting the crystallized semiconductor layer on the insulating layer.

17. The method according to claim 16, further comprising injecting an n type impurity into the crystallized semiconductor layer.

18. The method according to claim 16, further comprising injecting a p type impurity into the crystallized semiconductor layer.

19. The method according to claim 16, wherein the first thin film transistor and the second thin film transistor are formed in the same fabrication line.

20. The method according to claim 16, wherein the first thin film transistor and the second thin film transistor are integrally formed.

21. The method of claim 14, wherein forming the second thin film transistor includes:

forming an amorphous semiconductor layer on a first substrate;

forming a gate electrode on the amorphous semiconductor layer;

forming an insulating layer on the gate electrode; and

forming a source electrode and a drain electrode contacting the crystallized semiconductor layer on the insulating layer.

22. The method according to claim 21, wherein the first thin film transistor and the second thin film transistor are formed in the same fabrication line.

23. The method according to claim 21, wherein the first thin film transistor and the second thin film transistor are integrally formed.